in Molecular Cloning 2nd edition (authors: J. Sambrook, E.F. Frisch, T. Maniatis; Cold Spring Harbor Laboratory Press, 1989), 2.60-2.65 and phage particles were eluted with an SM buffer from the agar medium per each plate (hereinafter referred to as "amplified library"). A DNA was extracted from the amplified library using a DNA extracting kit (Lambda-TRAP PLUS: manufactured by Clontech) to prepare a phage cloned DNA. A polymerase chain reaction was performed using this phage cloned DNA as a template to amplify the DNA fragment. A reaction solution for polymerase chain reaction was prepared by taking 10 pmol of an oligonucleotide having the nucleotide sequence shown by SEQ ID: No. 3, 10 pmol of an oligonucleotide having the nucleotide sequence shown by SEQ ID: No. 4, 5 µl 10 X PCR buffer (manufactured by TAKARA SHUZO CO., LTD), 0.25 µl Taq DNA polymerase (TaKaRa Taq manufactured by TAKARA SHUZO CO., LTD), each 10 nmol of four kinds of nucleotides (dATP, dCTP, dGTP, dTTP: manufactured by TAKARA SHUZO CO., LTD), and 10ng of the phage clone DNA in a 0.5ml volume of a polymerase chain reaction tube and adding sterile distilled water to total 50 µl. Each step of polymerase chain reaction was carried out under the following conditions: The first cycle comprising a denaturing step holding a temperature at 95 °C for 1 minute, an annealing step holding a temperature at 55 °C for 2 minutes, and an extension step with a DNA polymerase holding a temperature at 72 °C for 3 minutes was performed once, and the second cycle comprising a denaturing step holding a temperature at 95 °C for 1

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minute, an annealing step holding a temperature at 55 °C for 1.5 minutes, and an extentsion step with a polymerase holding a temperature at 72 °C for 2 minutes was performed 34 times. After completion of the polymerase chain reaction, the reaction solution was analyzed on an agarose gel electrophoresis to select an amplified library from which about 700bp amplified DNA fragment is detected.

D1 cont

Please replace the paragraph beginning on page 33, line 18, with the following rewritten paragraph:

In order to clone a 5′ upstream region of a PPO gene which is missing in the PPO DNA fragment obtained in Example 1, a polymerase chain reaction was performed using as a template a DNA extracted from a rat cDNA library to amplify the DNA fragment. A reaction solution for polymerase chain reaction was prepared by taking 10 pmol of an oligobase having the nucleotide sequence shown by SEQ ID: No. 4, 10pmol T3 primer (manufactured by TAKARA SHUZO CO., LTD), 0.5 µl long amplifying Taq DNA polymerase (TaKaRa LA Taq manufactured by TAKARA SHUZO CO., LTD), 5 µl 10 X LA PCR buffer (manufactured by TAKARA SHUZO CO., LTD), each 20 nmol of four kinds of nucleotides (dATP, dCTP, dGTP, dTTP: manufactured by Clontech), and 10ng of phage cloned DNA in 0.5ml volume of a polymerase chain reaction tube and adding sterile distilled water to total 50 µl. Each step of polymerase chain reaction was carried out under the following conditions: The

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first cycle comprising a denaturing step holding a temperature at 95 °C for 1 minute, an annealing step holding a temperature at 55 °C for 2 minutes, and an extension step with a DNA polymerase holding a temperature at 72 °C for 3 minutes was performed once, and the second cycle comprising a denaturing step holding a temperature at 95 °C for 1 minute, an annealing step holding a temperature at 55 °C for 1.5 minutes, and an extension step with a polymerase holding a temperature at 72 °C for 2 minutes was performed 34 times. After completion of the polymerase chain reaction, the reaction solution was filtered by a spin column (MicroSpin S-400HR manufactured by Pharmacia Biotech) to purify the DNA fragments amplified by the polymerase chain reaction.

D2 cont

Please replace the paragraph beginning on page 37, line 4, with the following rewritten paragraph:

D3

A polymerase chain reaction was performed using as a template a full length gene cDNA encoding the rat-derived PPO obtained in Example 2 and as a primer an oligonucleotide having the nucleotide sequence shown by SEQ ID: No. 5 and that having the nucleotide sequence shown by SEQ ID: No. 6 to amplify the about 1.5kbp DNA fragment encoding PPO. A reaction solution in the polymerase chain reaction was prepared by taking 10pmol of an oligonucleotide having the nucleotide sequence shown by SEQ ID; No. 5, 10pmol of an oligonucleotide having the nucleotide sequence shown by SEQ ID: No. 6, 0.5 µl of long-amplifying Taq

DNA polymerase (TaKaRa LA Taq manufactured by TAKARA SHUZO CO., LTD.), 5.0 µl 10 X LA PCR buffer (manufactured by TAKARA SHUZO CO., LTD), each 20nmol of four kinds of nucleotides (dATP, dCTP, dGTP and dTTP; manufactured by Clontech), and 10ng of a plasmid containing full length cDNA of the rat PPO obtained in Example 2 in a 0.5ml volume of a polymerase chain reaction tube and adding sterile distilled water to total 50 µl. Each step in the polymerase chain reaction was performed under the following conditions: The first cycle comprising a denaturing step holding a temperature at 95 °C for 1 minute, an annealing step holding a temperature at 55 °C for two minutes, and extension step with a DNA polymerase holding a temperature at 72 °C for three minutes was performed once, and the second cycle comprising a denaturing step holding a temperature at 95 °C for 1 minute, an annealing step holding a temperature at 55 °C for 1.5 minutes, and an extension step holding a temperature at 72 °C for 2 minutes was performed 34 times.

D3 cont

Please replace the paragraph beginning on page 38, line 2, with the following rewritten paragraph:

D4

After the polymerase chain reaction, the DNA fragment amplified by the polymerase chain reaction was purified by filtering the reaction solution with a spin column (MicroSpin S-400HR manufactured by Pharmacia Biotech). A terminus of this DNA fragment was cut with restriction enzymes SacII and SmaI. On the

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other hand, pBluescript II SK+ (manufactured by Stratagene) was cut with restriction enzymes SacII and SmaI (both manufactured by TAKARA SHUZO CO., LTD) and the 5′ end was dephosphorylated with calf intestine alkaline phosphatase (manufactured by TAKARA SHUZO CO., LTD).

D4 cont

Please replace the paragraph beginning on page 42, line 6, with the following rewritten paragraph:

A polymerase chain reaction was performed by preparing a reaction solution using Advantage cDNA PCR kit (Clontech) according to the attached manual and repeating once a cycle comprising 94 °C for 1 minute and 70 °C for 4 minutes, four times a cycle comprising 94 °C for 10 seconds, then 70 °C for 4 minutes, five times a cycle comprising 94 °C for 10 seconds, then 68 °C for 4 minutes, and 25 times a cycle comprising 94 °C for 10 seconds, then 65 °C for 5 minutes, and an aliquot of the reaction solution was subjected to agarose gel electrophoresis to confirm that about 2kbp amplified fragment is obtained. Further, the excess primers in the reaction solution were removed by performing the manipulation using a spin column (MicroSpin S400HR Pharmacia Biotech) according to the attached manual and the manipulation was performed using TA Cloning Kit (Invitrogen) according to the attached manual to clone the amplified fragment into pCR2.1 plasmid.

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Please replace the paragraph beginning on page 43, line 16, with the following rewritten paragraph:

A polymerase chain reaction was performed using as a template a full length gene cDNA encoding PPO derived from *Chlamydomonas reinhardtii* obtained in Example 9 and as a primer an oligonucleotide having the nucleotide sequence shown by SEQ ID: No. 13 and that having the nucleotide sequence shown by SEQ ID: No 14 to amplify the about 2kbp DNA fragment encoding PPO. A reaction solution in the polymerase chian reaction was prepared by taking 10pmol of an oligonucleotide having the nucleotide sequence shown by SEQ ID: No. 13, 10pmol of an oligonucleotide having the nucleotide sequence shown by SEQ ID: No. 14, 0.5 µl of long-amplifying Taq DNA polymerase (TaKaRa LA Taq manufactured by TAKARA SHUZO CO., LTD), 5.0 µl of 10 X LA PCR buffer (manufactured by TAKARA SHUZO CO., LTD), each 20nmol of four kinds of nucleotides (dATP, dCTP, dGTP, dTTP: manufactured by Clontech), 10ng of a plasmid containing full length cDNA of *Chlamydomonas reinhardtii* PPO obtained in Example 9 in 0.5 ml volume of a polymerase chain reaction tube and adding sterile distilled water to total 50 µl. Each step in the polymerase chain reaction was performed under the following conditions: After the first cycle comprising a denaturing step holding a temperature at 95 °C for 1 minute, an annealing step holding a temperature at 55 °C for 2 minutes, and an extension step with a DNA polymerase holding a temperature 72 °C for 3 minutes was

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performed once, the second cycle comprising a denaturing step holding a temperature at 95 °C for 1 minute, an annealing step holding a temperature at 55 °C for 15 minutes, and an extension step holding a temperature at 72 °C for 2 minutes was performed 34 times.

D6 cont

Please replace the paragraph beginning on page 46, line 5, with the following rewritten paragraph:

A polymerase chain reaction is performed using as a template a full length cDNA of the rat-derived PPO obtained in Example 2, and using as a primer an oligonucleotide having the nucleotide sequence shown in SEQ ID: No. 7 and that having the nucleotide sequence shown in SEQ ID: No. 8 to amplify the about 1.5kbp DNA fragment encoding the rat PPO. The polymerase chain reaction is performed by adding 10pmol of an oligonucleotide having the nucleotide sequence shown in SEQ ID: No. 7, 10pmol of an oligonucleotide having the nucleotide sequence shown in SEQ ID: No. 8, 0.5 µl of Advantage KlenTaq Polymerase Mix (manufactured by Clontech), 2.5 µl of 10 X KlenTaq PCR reaction buffer (manufactured by Clontech), each 5nmol of four kinds of nucleotides (dATP, dCTP, dGTP, dTTP: manufactured by Clontech), and 10ng of the full length of cDNA of the rat-derived PPO obtained in Example 2 in a 0.2ml volume of a polymerase chain reaction tube to total amount of 25 µl. Each step in the polymerase chain reaction is performed under the following

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